

# **2009 Annual Group Monitoring Plan**

**For**

**Herbicide Applications to Freshwater Emergent Noxious and  
Quarantine Weeds performed under the Noxious Weed National  
Pollutant Discharge Elimination System (NPDES) Permit**

**Prepared by**

**Washington State Department of Agriculture**

**January 2009**

DEPARTMENT OF ECOLOGY  
JAN 30 2009  
WATER QUALITY PROGRAM

## Introduction

This monitoring plan is required under the Noxious Weed National Pollutant Discharge Elimination System (NPDES) Waste Discharge General Permit for freshwater emergent plants listed on the Washington State Noxious Weed List or the Washington State Noxious Weed Seed and Plant Quarantine List. Based on a 9<sup>th</sup> Circuit court decision, the Washington Department of Ecology (DOE) determined that NPDES permits are required for the application of pesticides to "waters of the state" in Washington State.

Over the life of NPDES Permit Number WAG-993000 the Washington State Department of Agriculture (WSDA) has sampled representative sites where various methods of applications were used to treat different noxious or quarantine list weeds at different types of locations. The concentration and transport of pesticides after application, relative pesticide persistence in the water column, and target plant species were recorded.

**Table 1** is the summary of the historical data. All concentration units are parts per billion. Samples were taken at sites where knotweed, parrotfeather, water lily, purple loosestrife, garden loosestrife, or yellow flag iris were treated. Sites were located at lakes, rivers, creeks, gravel bars, islands, and riparian areas. WSDA selected locations where different application methods and equipment were used.

Water samples were analyzed for the presence of glyphosate, imazapyr, or triclopyr. In cases where herbicide was detected in the water samples, the concentrations were less than the maximum allowable concentrations as outlined in Environmental Protection Agency drinking water standards.

**Table 1. Summary of water sample analysis for herbicide concentrations.**

Application Equipment	Analyte	Site	County	Target Plant(s)	Pre-treat (ppb)	1 hour post-treat (ppb)	24 hours post-treat (ppb)
backpack	glyphosate	Yakima River	Yakima	Parrotfeather	ND	343	53
boat mounted spray-tank	glyphosate	Chehalis River	Grays Harbor	Purple loosestrife	ND	ND	ND
backpack	glyphosate	Spring Lake	King	Water lily, Yellow flag iris, Purple loosestrife	ND	30	ND
backpack	glyphosate	Spring Lake	King	Water lily, Yellow flag iris, Purple loosestrife	ND	120	ND
backpack	glyphosate	Cottage Creek	King	Purple loosestrife	ND	ND	ND
backpack	glyphosate	Yakima River	Yakima	Purple loosestrife	ND	ND	ND
boat mounted spray-tank	glyphosate	Spring Lake	King	Yellow flag iris	ND	50	ND
backpack	imazapyr	Naches River	Yakima		ND	ND	ND
boat mounted spray-tank	triclopyr	Foster Island	King	Garden loosestrife	ND	3.6	2.6
pressurized spray-tank	imazapyr	Willapa River	Pacific	Knotweed	ND	ND	2.2
injection	glyphosate	Little Creek	Skamania	Knotweed	ND	50	10
injection	glyphosate	Washougal River	Skamania	Knotweed	ND	12.1	3.8
backpack	imazapyr	Willapa River, Trap Creek	Pacific	Knotweed	ND	ND	ND
injection	glyphosate	Newaukum River	Lewis	Knotweed	ND	ND	ND
backpack	imazapyr	Buena Creek	Yakima	Yellow flag iris	ND	205	ND
injection	glyphosate	Big River	Clallam	Knotweed	Not available	ND	11
boat mounted spray-tank	triclopyr	Borst Lake	King	Purple loosestrife	ND	27.4	0.8
injection	glyphosate	Canyon Creek	Skamania	Knotweed	ND	ND	ND
injection	glyphosate	Big River	Clallam	Knotweed	ND	ND	ND

ND = not detected

ppb = parts per billion

In consultation with DOE, WSDA has agreed not to collect water samples at aquatic sites where glyphosate and/or imazapyr are used to treat freshwater emergent noxious or quarantine list weeds are treated in 2009. One site from the Yakima River that is treated with triclopyr will be sampled in 2009.

## **Materials to be Analyzed**

Triclopyr (i.e. Renovate 3<sup>TM</sup>): 3,5,6-trichloro-2-pyridinyloxyacetic acid, triethylamine salt

## **Methods For Analysis**

EPA publishes laboratory analytical methods that are used by industries and municipalities to analyze the chemical and biological components of wastewater, drinking water, sediment, and other environmental samples that are required by EPA regulations under the authority of the Clean Water Act and the Safe Drinking Water Act. Almost all of these methods are published by EPA as regulations at Title 40 of the Code of Federal Regulations. The methods shown in the table below were recommended by industry for the analysis of these aquatic herbicides in water.

A laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC, will prepare all monitoring data. The laboratory selected will be accredited for the parameter being analyzed.

## **Site Selection for Sampling**

Samples will be collected from a randomly selected site in the Yakima River in Yakima County. Contractors treating weeds under WSDA's permit may be required to assist in sample collection and in notifying WSDA as to when applications will occur for planning purposes.

## **Sample Containers**

Water collected for laboratory analyses will be placed in appropriate size and style bottles that will be provided in advance by the selected laboratory. All bottles will contain the proper preservatives, if needed. Samples will be collected in a manner that ensures that any preservatives are not lost when filling the bottles.

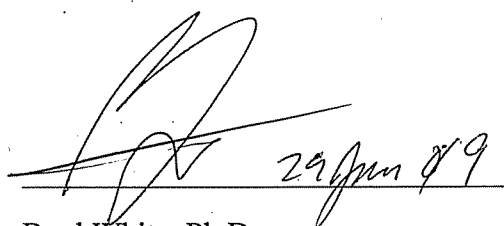
The sample bottles will be labeled prior to being filled to indicate the sample date and time, site location, name of person collecting the sample and analyses to be performed. All information pertinent to the sample collection will be recorded on monitoring data sheets. The information will include: date, time of sample collection, name of person collecting the sample and sample locations within the waterbody as well as other information. Chain of custody documentation will also be utilized to ensure sample integrity.

## **Sampling Protocol**

- Immediately prior to treatment, a surface water sample will be collected adjacent to the edge of the infestation to be treated (within one foot of the plants).
- One hour after the entire target infestation is treated; another surface water sample will be collected.
- A final sample will be taken, in approximately the same place as the one-hour sample, 24 hours after treatment

## Signatory Page

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiries of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

A handwritten signature in black ink, appearing to be 'Brad White', is written over a horizontal line. To the right of the signature, the date '29 June 89' is handwritten.

Brad White, Ph.D.

Pest Program Manager

Washington State Department of Agriculture